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EXAMINER
MATTIS, JASON E

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-17* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>05 June 2000</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All b)☐ Some * c)☐ None of:
        1.☒ Certified copies of the priority documents have been received.
        2.☐ Certified copies of the priority documents have been received in Application No. _____.
        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>6</u>.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to because of the following informalities:

Figures 1, 2, and 3 each depict prior art and should be labeled as "prior art".

Figure 2 has a misspelled word. The word "single" should be changed to the correct spelling.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2.   Claims 2-3, 6, 8-14, and 17 are objected to because of the following informalities:

Claim 2 contains the limitation "preferably being arranged in series." The word "preferably" does not impose a positive limitation. It is recommended that "preferably" be deleted from the claim. Claim 3 also contains a similar limitation using the word "preferably".

Claim 4 contains the limitations "the traffic contract" and "said calculation". Since there is no prior mention of these limitations in either claim 4 or claim 1, which claim 4 depends on" it is recommended that these limitations be changed to "a traffic contract" and "a calculation" respectively.

Claim 6 contains the limitation "a new cell from a buffer-in unit can be read". The words "can be" do not impose a positive limitation. It is recommended that the limitation be changed to "a new call from a buffer-in unit is read".

Claim 8 contains the limitation "incrementing of the PCR and the SCR". There is no prior mention of a PCR and SCR in claim 8 or in claim 1, which claim 8 depends on. It is recommend that the limitation be changed to "incrementing of a PCR bucket and an SCR bucket".

Claim 9 contains the limitations "the PCR" and "the associated CT". There is no prior mention of these limitations in claim 9 or claim 1, which claim 9 depends on. It is recommended that these limitations be changed to "a PCR" and "an associated CT".

Claim 10 contains the limitation "said One Cell buffer". There is no prior mention of a One Cell buffer in claim 10 or in claims 9 and 1, which claim 10 depends on. It is recommended that the limitation be changed to "a One Cell buffer".

Claim 11 contains the limitations "said threshold value" and "said SCR bucket". There is no prior mention of a threshold value or an SCR bucket in claim 11 or claims 9 and 1, which claim 11 depends on. It is recommended that these limitations be changed to "a threshold value" and "an SCR bucket" respectively.

Claim 12 contains the limitations "the threshold value" and "said One Cell buffer". There is no prior mention of a threshold value or a One Cell buffer in claim 12 or in claims 9 and 1, which claim 12 depends on. It is recommended that these limitations be changed to "a threshold value" and "a One Cell buffer" respectively.

Claim 13 contains the limitation "said SCR bucket". There is no prior mention of an SCR bucket in either claim 13 or in claims 12, 9, and 1, which claim 13 depends on. It is recommended that the limitation be changed to "an SCR bucket".

Claim 14 contains the limitation "said PCR and SCR bucket". There is no prior mention of a PCR and SCR bucket in claim 14 or in claim 1, which claim 14 depends on. It is recommended that the limitation be changed to "a PCR and SCR bucket".

Claim 17 contains the limitation "possibly for using said method as a single leaky bucket". The word "possibly" does not provide a positive limitation. It is recommended that "possibly" be deleted from the claim.

Please check all claims for problems similar to the ones noted above

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 15 contains the limitation "is decremented by D*M

every M'th cell". It is unclear what the variables D and M refer to.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public
> use or on sale in this country, more than one year prior to the date of application for patent in the United
> States.

6.   Claims 1, 4, and 16-17 are rejected under 35 U.S.C. 102(b) as being anticipated

by Duffle et al. (U.S. Pat. 5402412).

    With respect to claim 1, Duffle et al. discloses a method for controlling the

traffic an ATM network so as to maintain the Quality of Service thereof by implementing

Usage Parameter control **(See column 3 lines 17-23 and Figure 1 of Duffle et al. for reference to monitoring a stream of events, shaping the stream of events generated by a user, and policing a stream of events at a switch in an asynchronous transfer mode network)**. Duffle et al. also discloses at least one leaky bucket unit **(See column 3 lines 24-50 and Figure 1 of Duffle et al. for reference to system 10 comprising one or more leak buckets for each virtual circuit in an associated ATM network)**. Duffle et al. further discloses the leaky bucket arranged between an original cell flow of ATM-cells and a switch unit **(See column 3 lines 17-50 and Figure 1 of Duffle et al. for reference to the system 10 shaping cell flow on an ATM network at a switch meaning that there is an input of ATM cells that is shaped before switching the cells to an output)**. Duffle et al. also discloses there being one counter for each bucket per connection **(See column 3 line 63 to column 4 line 6 and Figure 1 of Duffle et al. for reference to memory circuitry 14 storing information relating to each bucket associated with the system 10 including information about a fill level, which is a counter for the bucket)**. Duffle et al. further discloses the counters being incremented and decrement according to predetermined criteria by means of a timer counter means **(See column 5 lines 12-37 and column 6 lines 17-29 of Duffle et al. for reference to function generating circuitry generating an updated fill level by incrementing and decrementing the fill levels according to functions and for reference to equation 1 which determines if an event I has occurred at time t, meaning there is a timer counter means to check if an event I has occurred at given times t)**. Duffle et al. also discloses decrementing the bucket

counters at regular intervals but only when there are no arriving cells **(See column 6 lines 17-57 and equations 1-3 of Duffle et al. for reference to if no event has occurred, meaning no cells have arrived at time t, equation 3 being used update the new current fill rate by decrementing the previous fill rate by an emptying rate)**. Duffle et al. further discloses computing real bucket values for a connection when a cell for the connection arrives **(See column 6 line 17 to column 7 line 12 and equations 1-3 of Duffle et al. for reference to computing updated fill levels using equation 3 each time a cell arrives, indicated by an event occurring as shown in equation 1)**.

With respect to claim 4, Duffle et al. discloses a dual leaky bucket arrangement comprising a logical dual leak bucket unit which is adapted for calculating whether an arriving ATM-cell is compliant with the traffic contract **(See column 5 line 62 to column 6 line 2 of Duffle et al. for reference to coupling multiple systems 10 together in parallel to monitor multiple rates, rates of a traffic contract, with the two systems in parallel being a logical dual leaky bucket unit)**. Duffle et al. also discloses performing a calculation after having read the connection number of the ATM-cell and thereafter the counter values related to that connection from a counter table **(See column 5 lines 38-61 and Figure 1 of Duffle et al. for reference to address register 32 providing an address to RAM 30, a counter table, for the bucket associated with the requesting virtual circuit, meaning that the a virtual circuit ID or number must be read so that the correct bucket data counter value is read from RAM 30)**.

With respect to claim 16, Duffle et al. discloses that there is used only a single time counter for all the connections involved **(See column 3 lines 51-62, column 6 lines 17-29, and Figure 1 of Duffle et al. for reference to using a single clock 26 to control the timing of the system 10 by checking if an event I has occurred at time t as shown in equation 1).**

With respect to claim 17, Duffle et al. discloses that an increment value of a second bucket is varied according to appropriate criteria, and more specifically by setting the increment value to zero possible for using the method as a single leaky bucket **(See column 6 line 17 to column 7 line 12 of Duffle et al. for reference to the amount by which fill levels are incremented in the buckets of the system 10 being variable implying that a user of the system may set the variable incrementing amounts to any value, including zero, so that a dual leaky bucket may be used as a single leaky bucket).**

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 2-3, 8-9, 11, and 14-15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Duffle et al. in view of Ramamurthy et al. (U.S. Pat. 6304551).

With respect to claims 2 and 3, Duffle et al. does not disclose using two

buckets with different priorities arranged in series with the first bucket being a peak cell

rate bucket and the second bucket being a sustainable cell rate bucket.

With respect to claims 2 and 3, Ramamurthy et al., in the field of

communications, discloses using a dual leaky bucket with a peak rate leaky bucket and

a sustainable rate leaky bucket connected in series **(See column 5 lines 19-28 and**

Figure 3 of Ramamurthy et al. for reference to the PCR and SCR leaky buckets

connected in series). Using a dual leaky bucket with a PCR bucket and an SCR

bucket connected in series has the advantage of allowing an ATM traffic flow to be

policed for both a peak rate and a burst data rate so that a single ATM source does not

flood system resources causing congestion.

It would have been obvious for one of ordinary skill in the art at the time of the

invention, when presented with the work of Ramamurthy et al., to combine using a dual

leaky bucket with a PCR bucket and an SCR bucket connected in series, as suggested

by Ramamurthy et al., with the method of Duffle et al., with the motivation being to allow

an ATM traffic flow to be policed for both a peak rate and a burst data rate so that a

single ATM source does not flood system resources causing congestion.

With respect to claim 8, Duffle et al. discloses incrementing of each bucket of

each connection is checked at a specific time interval with the incrementing including

checking whether there is an ATM-cell waiting to be processed and if there is no cell

waiting to be processed, decrementing the bucket state **(See column 6 line 17 to column 7 line 12 of Duffle et al. for reference to checking if an event, such as if an ATM cell has arrived and is waiting to be processed, has occurred at a time interval t as shown in equation 1, and for reference to incrementing the current fill rate if there is a cell waiting and decrementing the fill rate if there is no cell waiting)**. Duffle does not specifically disclose that the buckets that are incremented and decremented are peak cell rate and sustainable cell rate buckets.

With respect to claim 9, Duffle et al. discloses that if a new ATM-cell has arrived, the real value of the bucket is calculated with the real value being placed in the associated CT with the process checking if the real value is greater that the maximum allowed bucket value **(See column 5 line 12-37 and column 6 line 17 to column 7 line 12 of Duffle et al. for reference to if an event has occurred at time t, for example an ATM-cell has arrived, function generating circuitry 20 using equation 3 to update the real value of the fill rate for the appropriate bucket and store the updated value in RAM 30 and for reference to checking if the fill rate, $B_{i,t}$, is greater than the depth of the bucket, D_i, as a part of equation 3)**. Duffle does not specifically disclose that the bucket is a peak cell rate bucket.

With respect to claim 11, Duffle et al. discloses that if the real bucket value is lower than the threshold value then virtual value of the bucket will be incremented by an appropriate increment factor **(See column 4 line 52 to column 7 line 12 of Duffle et al. for reference to if the real bucket value is less than a reference level, using equation 3 to increment the bucket value by an amount, $A_{i,t}$)**. Duffle et al. also

discloses that the process will calculate the real value of another bucket which is placed in the associated counter table **(See column 5 line 62 to column 6 line 2 of Duffle et al. for reference to using multiple buckets for each channel to monitor multiple rate requirements meaning that a second bucket is used to performing the same process as the first bucket to calculate an updated fill value and store the updated fill value in RAM 30)**. Duffle does not specifically disclose that the two buckets are a peak cell rate bucket and a sustainable cell rate bucket.

With respect to claim 14, Duffle et al. discloses that decrementing the buckets includes incrementing the time counter and calculating the virtual value of the buckets after which calculation the process goes to an idle state **(See column 6 line 17 to column 7 line 12 of Duffle et al. for reference to checking if an event has occurred when a timer reaches time t and if an event has not occurred at the time t, decrementing the fill rate by the emptying rate, E_i, before and going to an idle state waiting for the timer to reach a new time t)**. Duffle does not specifically disclose that the two buckets are a peak cell rate bucket and a sustainable cell rate bucket.

With respect to claim 15, Duffle et al. discloses that the virtual value of any bucket for any connection is decremented by an amount for every certain amount of cells **(See column 6 line 17 to column 7 line 12 of Duffle et al. for reference to decrementing a fill rate by the emptying rate, E_i, for each cell received)**. Duffle does not specifically disclose that the bucket is a peak cell rate bucket.

With respect to claims 8-9, 11, and 14-15, Ramamurthy et al., in the field of communications, discloses using a dual leaky bucket with a peak rate leaky bucket and a sustainable rate leaky bucket connected in series **(See column 5 lines 19-28 and Figure 3 of Ramamurthy et al. for reference to the PCR and SCR leaky buckets connected in series).** Using a dual leaky bucket with a PCR bucket and an SCR bucket connected in series has the advantage of allowing an ATM traffic flow to be policed for both a peak rate and a burst data rate so that a single ATM source does not flood system resources causing congestion.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Ramamurthy et al., to combine using a dual leaky bucket with a PCR bucket and an SCR bucket connected in series, as suggested by Ramamurthy et al., with the method of Duffle et al., with the motivation being to allow an ATM traffic flow to be policed for both a peak rate and a burst data rate so that a single ATM source does not flood system resources causing congestion.

9.   Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duffle in view of Sallberg et al. (U.S. Pat. 5361252).

With respect to claim 5, Duffle et al. discloses sending the new computed values to the CT **(See column 5 lines 38-61 and Figure 1 of Duffle et al. for reference to function generating circuitry 20 generating updated fill levels that are stored in RAM 30).** While Duffle et al. does disclose sending an allow or a hold signal depending on whether the ATM-cell is compliant **(See column 5 lines 38-61 of Duffle**

et al. for reference to the allow and hold signals), Duffle et al. does not specifically

disclose sending those signals to a one cell buffer.

With respect to claim 6, Duffle et al. does not disclose that if the one cell buffer

receives a send signal it will pass the cell to a buffer out unit and a new cell can be

read.

With respect to claim 7, Duffle et al. does not disclose that if the one cell buffer

receives a not send signal then it will read a new cell from the buffer-in unit that

overwrites the old cell.

With respect to claims 5-7, Sallberg et al. in the field of communications,

discloses a one cell buffer receiving signals indicating that a packet is to be either

forwarded or not forwarded and the buffer responding by either forwarding or discarding

the packet **(See column 3 lines 31-51 and Figure 2 of Sallberg et al. for reference to**

buffer 7 receiving signals indicating that a packet should be forwarded or

discarded). Sending send and not send signal to a one cell buffer has the advantage

of allowing the ATM network to individually make a decision about whether to forward or

drop each cell one at a time without effecting other cells waiting to be forwarded.

It would have been obvious for one of ordinary skill in the art at the time of the

invention, when presented with the work of Sallberg et al., to combine sending send and

not send signal to a one cell buffer, as suggested by Sallberg et al., with the method of

Duffle et al. with the motivation being to allow the ATM network to individually make a

decision about whether to forward or drop each cell one at a time without effecting other

cells waiting to be forwarded.

10.   Claims 10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Duffle et al. in view of Ramamurthy et al. as applied to claim 2-3, 8-9, 11, and 14-

15 above, and further in view of Sallberg et al.

With respect to claim 10, while Duffle et al. does disclose that if the real bucket

value is greater than the threshold value the a hold signal is generated and a bucket

counter is decremented **(See column 5 lines 38-61 and column 6 line 17 to column 7**

line 12 of Duffle et al. for reference to the hold signal and decrementing the fill

level), the combination of Duffle et al. and Ramamurthy et al. does not disclose sending

a not send cell signal to a one call buffer.

With respect to claim 12, while Duffle et al. does disclose checking a bucket

value against a threshold value and generating a hold signal if the bucket value is

greater than the threshold **(See column 4 line 52 to column 7 line 12 of Duffle et al.**

for reference to if the real bucket value is greater than a reference level,

generating a hold signal), and Ramamurthy et al. does disclose using a peak cell rate

bucket **(See column 5 lines 19-28 and Figure 3 of Ramamurthy et al. for reference**

to the PCR leaky bucket), the combination of Duffle et al. and Ramamurthy et al. does

not disclose sending a not send cell signal to a one cell buffer.

With respect to claim 13, While Duffle et al. does disclose that if the real bucket

value is lower than the threshold value then virtual value of the bucket is calculated

(See column 4 line 52 to column 7 line 12 of Duffle et al. for reference to if the real

bucket value is less than a reference level, using equation 3 to calculate the fill

rate), and Ramamurthy et al. does disclose using a sustainable cell rate bucket **(See column 5 lines 19-28 and Figure 3 of Ramamurthy et al. for reference to the SCR leaky bucket)**, the combination of Duffle et al. and Ramamurthy et al. does not disclose sending a send cell signal to a one cell buffer.

With respect to claims 10 and 12-13, Sallberg et al. in the field of communications, discloses a one cell buffer receiving signals indicating that a packet is to be either forwarded or not forwarded and the buffer responding by either forwarding or discarding the packet **(See column 3 lines 31-51 and Figure 2 of Sallberg et al. for reference to buffer 7 receiving signals indicating that a packet should be forwarded or discarded)**. Sending send and not send signal to a one cell buffer has the advantage of allowing the ATM network to individually make a decision about whether to forward or drop each cell one at a time without effecting other cells waiting to be forwarded.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Sallberg et al., to combine sending send and not send signal to a one cell buffer, as suggested by Sallberg et al., with the method of Duffle et al. and Sallberg et al. with the motivation being to allow the ATM network to individually make a decision about whether to forward or drop each cell one at a time without effecting other cells waiting to be forwarded.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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